Modular Computers®

CPCI Backplane Manual

PRODUCT DOCUMENTATION

PD13

CP6-BP8-STD

Reference ID: 24229 PD13
Revision: 01
Issued: March 01, 2002

The product described in this manual is in compliance with all applied CE standards.

Revision History

Manual/Product Title:	CPCI Backplane Manual: Product Documentation: CP6-BP8-STD
Reference ID:	24229 PD13

Rev. Index	Brief Description of Changes	Date of Issue
01	Initial Issue	Mar. 01, 2002

Imprint

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This manual was realized by: **TPD/Engineering, PEP Modular Computers GmbH**.

1. Introduction

The specific product description provided with this product documentation is part of the PEP's CPCI Backplane manual. For further information, in particular regarding general details as well as safety and warranty statements, refer to the CPCI Backplane Manual, ID 24229.

2. CP6-BP8-STD DIN M-type Standard Backplane

The main features of the 6U, 8-slot, DIN type M powered standard backplane CP6-BP8-STD are described in the following table:

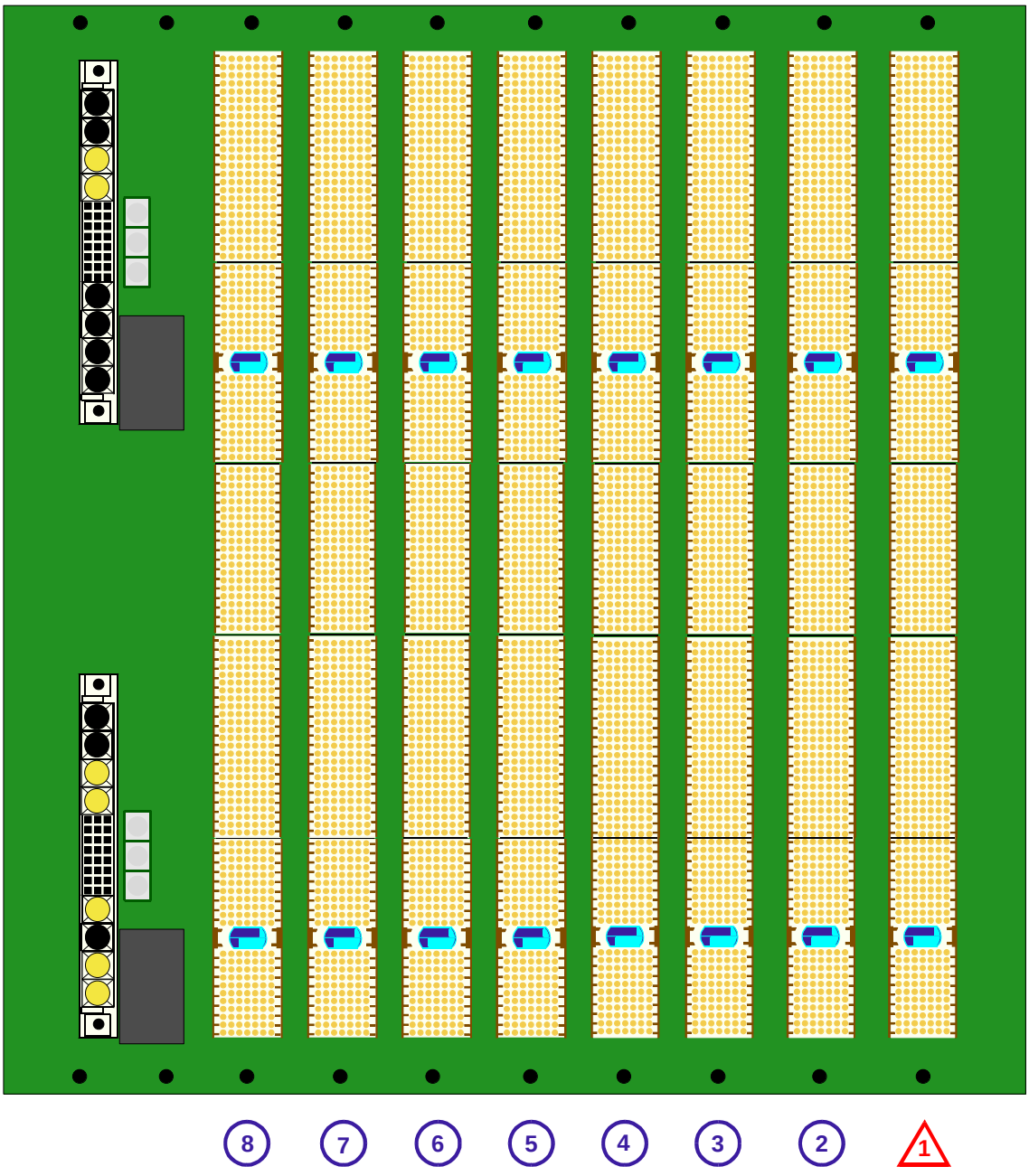
Table 1: Distinctive Features of Backplane CP6-BP8-STD

Feature	Specification
Form Factor	6U
Size	222.51*262.05 mm
Number of Slots	8
Bus Resolution	64 bits
Bus Frequency	33MHz
Rear I/O Connectivity	P3 to P5 on all slots
Hot-Swap Capability	Yes
Power Supply Connector	DIN type M
Redundant Power Supply	—
Flexible Grounding Option	Yes
Fan Connector	Yes
MSD Connector	Yes
Power LED	Yes
PS-ON Connector	Yes
Reset Function Connector	—

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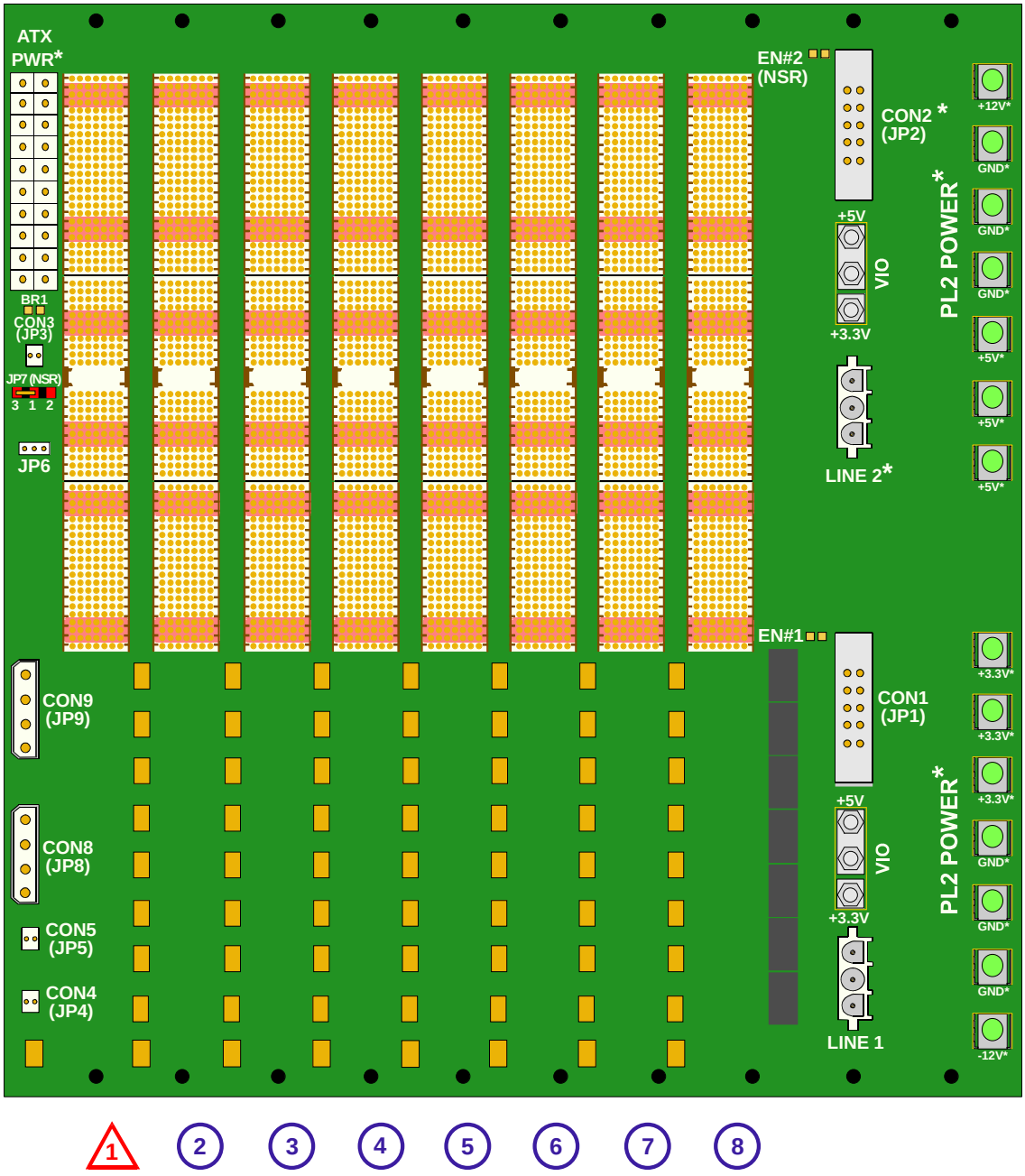
3. Board Layout

Figure 1: CP6-BP8-STD Board Layout (Front)



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Figure 2: CP6-BP8-STD Board Layout (Reverse)



Components marked with an asterisk (*) are optionally available.

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4. Signalling Environment

4.1 V(I/O) Setting

For accommodating 3U and 6U power supplies there are two blocks of three high-current terminals (designated as V(I/O)) for connecting V(I/O) to either the +5V or +3.3V power supply. V(I/O) must be connected either to the +5V or the +3.3V input power. It is the responsibility of the system integrator to ensure that the required signalling voltage is implemented and that the backplane P1 connector coding corresponds to the implemented signalling voltage.



Warning!

Using both 3.3V and 5V boards within the same backplane segment may result in damage to your equipment. Please note that the presence of only one 5V board determines a 5V signalling environment. The default setting is 5V.

4.2 P1 Connector Coding for V(I/O)

The CompactPCI Specification foresees coding of the P1 connector to correspond to the signalling environment of the PCI bus. For this reason, only boards with universal or the corresponding coding can be physically inserted into the backplane. PEP's factory default setting for V(I/O) is +5V and male, 1567 code, brilliant blue coding keys are used.



Warning!

Using boards with an inadequate signalling voltage may result in damage to your equipment. Therefore, when changing the signalling environment from 5V to 3.3V or vice versa, it is mandatory that proper coding keys are used (refer to chapter 3 of the CPCI Backplane Manual, ID 24229, for details).

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5. Interfaces

5.1 Line Connector

The power supply to the backplane is connected by means of the 3-pole Mate-N-Lok connector marked ”LINE1” on the reverse side of the backplane.

Figure 3: Orientation and Pinouts of CP6-BP8-STD Connector LINE1

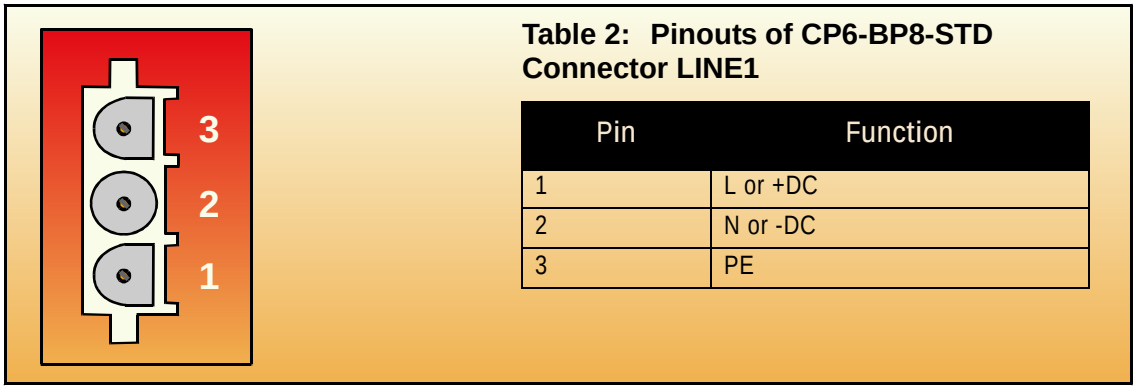


Table 2: Pinouts of CP6-BP8-STD Connector LINE1

Pin	Function
1	L or +DC
2	N or -DC
3	PE

5.2 ATX Power Supply Connector

The main input power voltage is fed directly to the ATX power supply unit without any throughput via a backplane power supply connector. The power supply unit’s V1 ... V4 output power is distributed to the backplane by means of the 20-contact, male, Molex Mini-Fit Junior Connector ”ATX”.

Figure 4: Orientation and Pinouts of CP6-BP8-STD ATX Connector

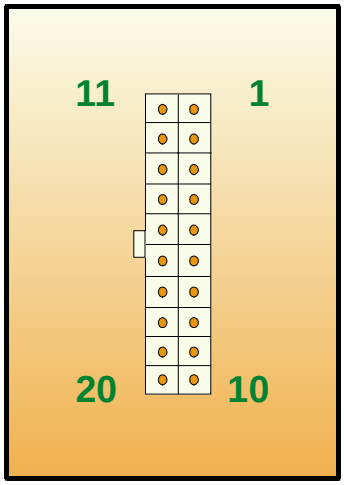


Table 3: ATX Connector Pinouts

Pin	Function	Pin	Function
1	+3.3V	11	+3.3V
2	+3.3V	12	-12V
3	GND	13	GND
4	+5V	14	PS_ON#
5	GND	15	GND
6	+5V	16	GND
7	GND	17	GND
8	PWR_OK	18	-5V
9	+5 VSB	19	+5V
10	+12V	20	+5V

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5.3 Power Supply Connector

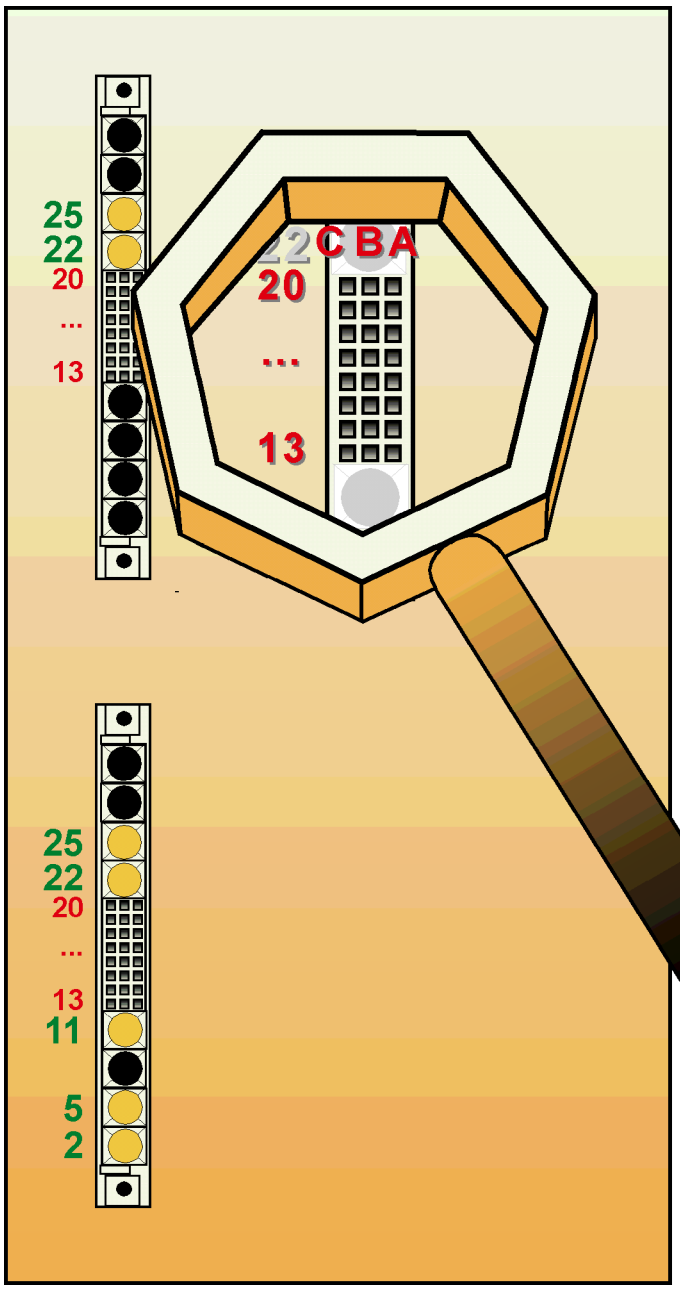


Figure 5: Orientation and Pinouts of CP6-BP8-STD DIN Type M Power Supply Connector

The V_{EU} and V_{US} input voltages to the power supply unit and the V_{o1}...V_{o4} output voltages from the power supply unit to the backplane are connected via a 32-pole DIN type M female power supply connector.

Warning!

System integrators must ensure that only power supplies which comply with the pinout as provided in Table 4 are used with this connector!

Pins 2, 5, 28, and 31 do not comply with the CompactPCI Power Interface Specification.

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Table 4: DIN Type M Connector Pinout

Pin	Function	Pin	Function	Pin	Function
		B.2	L or +DC*		
		B.5	N or -DC*		
		B.8	No Pin Loaded		
		B.11	PE*		
C.13	EN#	B.13	+3.3V	A.13	Spare
C.14	DEG#	B.14	+3.3V	A.14	INH#
C.15	FAL#	B.15	+3.3V	A.15	ISH
C.16	+3.3V	B.16	+3.3V	A.16	5V Sense -
C.17	+3.3V	B.17	+3.3V	A.17	5V Sense +
C.18	+3.3V	B.18	+3.3V	A.18	+3.3V
C.19	+12V	B.19	+12V	A.19	+12V
C.20	-12V	B.20	-12V	A.20	-12V
		B.22	+5V		
		B.25	GND		
		B.28	No Pin Loaded* **		
		B.31	No Pin Loaded* **		
L = line, N = neutral, PE = protective earth;					

** No pin loaded at upper DIN M24/8 power supply connector;*
*** No pin loaded at lower DIN M24/8 power supply connector*

5.4 Faston/M4 Terminals

In addition to ATX and DIN type M power connectors, this backplane can be provided with Faston/M4 type power terminals for use with non-pluggable power supplies. See Figure 2 for the location of each terminal.

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5.5 Fan Connectors

The backplane is equipped with two lockable Molex male connectors, JP4 and JP5, for the connection of fans to the 12V power supply of the bus.

Figure 6: Orientation and Pinouts of CP6-BP8-STD Connectors JP4 and JP5

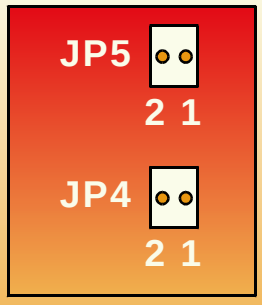


Table 5: Pinouts of CP6-BP8-STD Connectors JP4 and JP5

Pin	Function
1	GND
2	+12V

5.6 MSD Connectors

Two 4-pole Molex male connectors, JP8 and JP9, are equipped on the backplane for the connection of mass storage devices (drives) to the +5V/+12V power supply of the bus.

Figure 7: Orientation and Pinouts of CP6-BP8-STD Connectors JP8 and JP9

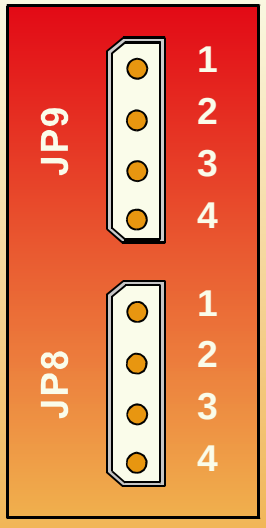


Table 6: Pinouts of CP6-BP8-STD Connectors JP8 and JP9

Pin	Function
1	+12V
2	GND
3	GND
4	+5V

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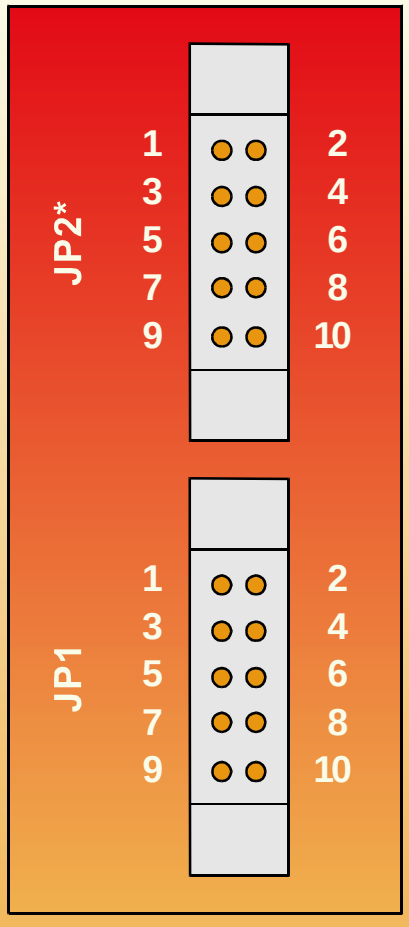
5.7 Auxiliary Signal Connectors

The connection of the auxiliary signals is accomplished by means of the two 10-pole LPV female connectors JP1 and JP2.

Note...

When using an ATX power supply unit its auxiliary signals must be connected to the auxiliary signals of the PCI bus.

Figure 8: Orientation and Pinouts of CP6-BP8-STD Connectors JP1 and JP2



**This connector is available optionally.*

Table 7: Pinouts of CP6-BP8-STD Connectors JP1 and JP2

JP1		JP2	
Pin	Function	Pin	Function
1	GND	1	GND
2	EN#1[1]	2	EN#2
3	GND	3	GND
4	INH#1	4	INH#2[3]
5	DEG#1[2,3]	5	DEG#2[3]
6	FAL#1[2,3]	6	FAL#2[3]
7	GND	7	GND
8	PRST#1[3]	8	PRST#2[3]
9	GND[4]	9	GND[4]
10	+5V[4]	10	+5V[4]

Legend:

[1] ATX power supply unit: The signal PS-ON (ATXPWR.14) is connected to EN#1 via the jumper BR1 normally closed.

[2] ATX power supply unit: The signal PS-OK (ATXPWR.8) can be connected via the 3-pole jumper JP7 either to FAL#1 or DEG#1 (see also section "Jumper Setting").

[3] Also in system slot.

[4] Also sense down.

Note...

Inserting a 0-ohm resistor at the location marked on the board with EN#1 the signals EN#1 of the power supply unit can be connected permanently with GND. Thus, enabling the power supply unit can be forced by default.

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5.8 Power Supply Remote Enabling

The Molex male connector JP3 has a double function. It can be used as a power supply remote enable connector or, if bridged, as a wire jumper. If used as a connector, JP3 offers the possibility of remote ON/OFF commuting via an external power supply enable switch.

Figure 9: Orientation and Pinouts of CP6-BP8-STD Connector JP3

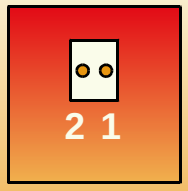


Table 8: Pinouts of CP6-BP8-STD Connector JP3

Pin	Function
1	GND
2	PS_ON#

If JP3 is used as a wire jumper, the remote ON/OFF commuting is accomplished by closing JP3. No external power supply enable switch is required in this case.

5.9 Power LED Connector

The 3-pole 2.54 mm pin-row male connector JP4 offers the possibility of connecting a ”Power ON/OFF” LED. The connector pinouts are identical to those of PC connectors customary in trade. Voltage is supplied by the 5V line.



Warning!

By default, voltage is applied by the 5V supply line without any resistor being serially connected to the LED. However, such a resistor must be inserted in the circuit to protect the LED from possible overcurrents.

Figure 10:Orientation and Pinouts of CP6-BP8-STD Connector JP6



Table 9: Pinouts of CP6-BP8-STD Connector JP6

Pin	Function
1	+5V
2	N/C
3	GND

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6. Jumper Settings

The CP6-BP8-STD backplane is provided with the following jumpers. The function of these jumpers can be described as follows:

- External power supply enabling (BR1, JP3) with 0-ohm resistor EN#1 open;

The jumper settings are described in the following tables:

Table 10:Settings of CP6-BP8-STD Jumpers BR1 and JP3

Function	BR1	JP3
Not supported	Open	Open
	Open	Closed
Power supply OFF	*Closed*	*Open*
Power supply ON	Closed	Closed

Default settings in italics.

The control signal to enable the power supply is available additionally on connector JP1 (pin 2).

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